1851MNRAS..11..219.

D'Arrest's comet, as seen here, exhibited no nucleus; the errors of observation will consequently be large. The first observation was taken with a wire-micrometer, the three last with a ring-micrometer, radius 444″. The correction for refraction has been applied. Cloudy weather prevented observation previous to July 18; I was then absent from Durham till August 18. Attempts since Sept. 6 have been unsuccessful.

## *Elliptic Elements.**

### By M. E. Vogel, from observations on July 2, and July 23, August 4, at Berlin.

| | ° | ′ | ″ | |
|---|---|---|---|---|
| M ........... | 0 | 0 | 0·0 | 1851, July 8·98442, Berlin M.T. |
| π ........... | 323 | 55 | 11·7 | Mean Equinox, 1851, Jan. 0. |
| ☊ ........... | 149 | 8 | 17·3 | |
| $i$ ........... | 14 | 10 | 47·4 | |
| φ ........... | 43 | 33 | 30·0 | |
| Log $e$ ...... | 9·838278 | | | |
| Log $a$ ...... | 0·580140 | | | |
| Log $\mu$ ...... | 2·479797 | | | |
| Periodic Time | 2708days·994 | | | (Motion direct.) |

Compd.—Obsd.

δ. long. = −0″·2

δ. lat. = −0·1

### By Mr. Norman Pogson, from the following observations:—

| 1851. | Mean Time at Place. h m s | R.A. ° ′ ″ | Decl. ° ′ ″ | |
|---|---|---|---|---|
| June 29 | 13 4 5 | 10 4 47·0 | + 10 37 35·0 | Leipsic |
| July 6 | 13 21 10 | 17 46 6·6 | 10 49 20·0 | Bonn |
| 24 | 13 11 49 | 35 33 50·4 | + 9 53 7·5 | — |

| | | |
|---|---|---|
| T .............. | July 10·002868 | Greenwich M.T. |
| | ° ′ ″ | |
| π ................ | 324 7 48·05 | Mean Equinox, August 1. |
| ☊ ................ | 148 13 14·39 | |
| $i$ ................ | 14 4 2·26 | |
| φ ................ | 38 31 36·71 | |
| $e$ ................ | 0·6228820 | |
| Log $a$ .............. | 0·4923758 | |
| Log $q$ .............. | 0·0688536 | |
| Log $\mu$ .............. | 2·8114429 | |
| $\mu$ .............. | 647″·80271 | |
| Period ........... | 2000days·61 | |

"The middle observation is represented in longitude within 0″·80, and in latitude within 0″·04.

"The periods obtained by those astronomers who have undertaken the calcula-

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* Mr. George Rümker forwarded parabolic elements and an approximate ephemeris; these elements are superseded by the later determinations.

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1851MNRAS..11R.220.

tion of the orbit of this comet are remarkably discordant, as may be perceived from the following comparison :—

| | |
|---|---|
| Villarceau | 2921 days. |
| Vogel | 2709 |
| D'Arrest | 2577 |
| — (corrected elements from normal places) | 2353 |
| Pogson | 2001 |

"Of these, D'Arrest's corrected elements are, I believe, nearest the truth, and will serve to follow the comet during the remainder of its present apparition.

"With the larger telescopes it will probably be visible for some time longer; and as so much uncertainty exists at present with respect to the time of its return, it is to be sincerely hoped that such valuable observations will be obtained."

## BRORSEN'S FOURTH COMET.*

On August 1, at about $11^h 45^m$ P.M., M. Brorsen, of Senftenberg, discovered a telescopic comet in *Can. Venat.* Though small, he calls it very bright. By seven comparisons with Bessel's star, Zone 413, 8th mag., $13^h 53^m 57^s{\cdot}12 + 31^\circ 31' 40''{\cdot}2$, he obtained the following place :—

| 1851. | Senftenberg M.T.<br>h m s | R.A. Comet.<br>h m s | Dec. Comet.<br>° ′ ″ |
|---|---|---|---|
| Aug. 1 | 13 9 21·4 | 13 54 58·43 | +31 27 7·3 |
| Daily variation | | +1 32·9 | + 23 25 |

### Altona. (Dr. Petersen.)

| 1851. | Altona M.T.<br>h m s | R.A.<br>h m s | Dec.<br>° ′ ″ |
|---|---|---|---|
| Aug. 4 | 11 25 53 | 13 59 58·93 | +32 48 2·6 |

The air so thick and unfavourable that the comet was seen with difficulty. The observation in declination not to be relied on.

### Hamburg. (M. Rümker.)

| 1851. | Hamburg. M.T.<br>h m s | R.A.<br>° ′ ″ | Dec.<br>° ′ ″ |
|---|---|---|---|
| Aug. 4 | 11 16 11·5 | 209 59 43·8 | +32 48 22·1 |
| 5 | 11 10 0·7 | 210 26 21·2 | 33 15 36·5 |
| 6 | 10 47 25·4 | 210 53 15·7 | 33 42 25·8 |
| 19 | 10 46 6·3 | 217 42 25·4 | 39 51 13·0 |
| 21 | 9 40 52·3 | 218 55 17·2 | 40 48 37·7 |
| 22 | 9 36 19·6 | 219 33 30·4 | 41 18 1·0 |
| 24 | 9 49 35·1 | 220 53 51·4 | 42 18 2·2 |
| 25 | 9 16 51·5 | 221 36 36·7 | 42 48 36·4 |
| 28 | 9 20 36·7 | 223 47 18·1 | 44 18 52·7 |
| 29 | 10 38 26·2 | 224 36 27·8 | 44 51 15·3 |
| Sept. 6 | 9 37 38·1 | 231 49 28·2 | +48 59 39·7 |

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* This was also discovered by M. Schweizer at Moskow, on August 21.

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